Click here to go back to Table of Contents

Wildlife Habitat Relationships for the Coast Guide:

Field workers occasionally have noted relationships of certain plant communities with wildlife species, but to date no studies have been undertaken with the specific intent of relating wildlife use to published plant associations (with the exception of deer and elk use tallied during a portion of early data gathering efforts). Wildlife discussions in this guide are meant to serve as a brief introduction and overview of current knowledge and hypotheses about wildlife in forest ecosystems within the range addressed by this guide.

Four headings are included in this portion of the guide:

- Overview of wildlife numbers and diversity
- Ecosystem components that encourage wildlife diversity
- Disturbances that affect wildlife habitat
- Consideration of specific species and groups

You will find a list of common and scientific names of vertebrates that regularly utilize terrestrial habitats of the Oregon Coast range at the end of this document.

Overview of wildlife numbers and diversity:

Approximately 108 species of birds, 57 mammals, 16 amphibians, and 12 reptiles carry out a significant part of their life cycle within terrestrial habitats in the area covered by this guide. Over 86 additional species of birds are rare in the terrestrial habitats covered by this guide: they either have been recorded only a few times, are strictly aquatic, only occur in non-forest habitats, or regularly overfly the region. Another 100 more species of birds and mammals occur on nearby coastal shores, rocks, and ocean. While most mammal, amphibian, and reptile populations within the area considered are resident, only about 23 of the regularly occurring bird species are largely resident. Another 41 migrate annually, bringing different individuals of the same species here during different seasons; about 38 are present only during

migration and summer; and about 7 only during migration and winter.

Ecosystem components that encourage wildlife diversity:

While a large number of factors determine presence and abundance of wildlife in any particular landscape, the following habitat components are known to have a relatively strong influence on biodiversity in mountain forests covered in this guide. See also Brown (1985), Bunnell and Kremsater (1990), Hansen et al. (1991), McComb et al. (1993), Hunter (1997), Marcot (1997), O'Neil et al. (2000), and Johnson and O'Neil (2001).

Dead and partly decomposing trees--Approximately one-third of bird and mammal species in forested landscapes use tree cavities for denning, nesting, or roosting. Snags, dead tree tops, and otherwise decayed portions of live trees provide opportunity for woodpeckers and other species to create holes. These cavities are in turn used by secondary cavity-nesters that search for and use these cavities, rather than create their own. Cracks, crevices and loose bark also provide nesting and roosting substrates for bats and brown creepers. Probably the rarest structures in the forest important to vertebrates, and the most difficult to duplicate, are large hollow trees. These are often western redcedar or incense cedar, but can be just about any species of tree. Some trees are hollow from the bottom up, some from the top down, some only in the middle (but the latter are very difficult to find). Bears, bats, swifts, and other mammals and birds utilize these structures. Vaux's swifts nesting in forests exclusively use these structures.

Down wood--Logs are used by a wide variety of wildlife, but small mammals and amphibians are probably the groups most dependent upon these structures. Some species prefer more sound structures, utilizing the space created by loose bark, while others predominate in more decayed structures that are soft enough to tunnel through or that have a matrix of navigable cracks due to the work of brown cubical rot. Many species utilize logs simply for hiding cover, nesting cover, travelways, or perches.

Diversity of tree species--Different tree species germinate in different ground conditions, grow at different rates, exhibit different shapes to their crowns, boles, and leaves, have different susceptibilities to root rots, stem rots, and mistletoes, are differentially resistant to stem breakage from wind, ice, and snow, attract or repel different communities of invertebrates, and finally, different tree species have different maximum heights and senesce and die at different ages. All these differences suggest that a wide variety of nesting, foraging, roosting, hiding, and resting habitats may be produced by different combinations of species, ages, and conditions of trees. Thus, single-species stands typically exhibit less vertebrate diversity than multi-species stands.

Broadleaf trees--The significant differences between conifers and broadleaf trees cause the combination of these species in forest stands and landscapes to significantly increase the number of animal species present. Warbling vireos are most frequent in areas with abundant broadleaf trees or tall shrubs, and black-throated gray warblers and black-headed grosbeaks prefer mixed habitats. In the Douglas-fir and drier western hemlock associations on the eastern foothills, broadleaf trees (especially oak) attract western gray squirrels, but in all plant associations, sites dominated by broadleaf trees are likely absent of Douglas squirrels. Broadleaf trees may be important to mollusk diversity.

Shrubs--Forest understory shrubs provide nesting structures for Swainson's thrushes, winter wrens, and Wilson's warblers. The Wilson's warbler in particular utilizes tall deciduous shrubs for nesting. Shrubs provide important habitat for invertebrates, browse for deer and elk, and cover for a wide variety of birds, mammals, and reptiles. Patches of older shrubs in particular can be hotspots for arthropod, lichen, and bryophyte diversity.

Fruits, berries, and nuts--Numerous trees, shrubs, and forbs produce seeds and soft fruits that are consumed by a wide variety of birds and mammals. Some of the more common species producing mast include all conifers, maples, and hazel. Oregon

white oak and Pacific madrone occur sparingly, most often in or near the Douglas-fir series. Species producing berries (i.e. seeds with a fleshy outer layer) include dwarf and tall Oregon grapes, salal, several species of blackberry, thimbleberry, several species of manzanita, salmonberry, bitter cherry, snowberry, several species of rose, Pacific dogwood, several species of huckleberry, blue and red elderberry, and cascara.

Soil and forest litter--Soil characteristics combine with annual temperature, precipitation, and solar exposure to determine suitability and growth potential of a site for plant species and communities. Burrowing animals such as gophers, moles, some voles, and mountain beaver prefer relatively porous soil. Several species of shrews appear to be particularly abundant where forest floor litter is abundant and deep, and western red-backed voles are especially common in areas with a thick duff layer. Forest floor characteristics are also important to ground-dwelling invertebrate communities.

Rocks, cliffs, caves--Many different structures are created by rock. Cobble-sized talus is common below cliffs and on steep rocky slopes. These habitats may be dominated by several species of amphibians (e.g. western redback salamander, clouded salamander) if wet, and several species of snakes (e.g. northwestern garter snake) and lizards (e.g. northern alligator lizard) if dry, and some communities have both. Mice and voles also inhabit talus. Accumulations of larger rocks provide homes for long-tailed weasels and potential denning sites for other medium to large mammals. Cliffs provide nest sites for peregrine falcons, common ravens, and violet-green swallows, and caves are often home to turkey vultures, bats, and medium and large mammals. Waterfalls and seepy cliffs may be occupied by the rare black swift, but probable nest sites have not yet been located in the Coast Range. In arid associations, seepy areas provide rare habitats for amphibians and mollusks.

Water--While many animals gain a substantial portion of their water needs from the food they eat, most also require consumption

of water on a near-daily basis. While small mammals and birds can often obtain water from condensation on vegetation, larger animals are more dependent upon more substantial water sources such as streams and ponds. In most of the area covered by this guide, open water sources are seldom more than a quarter-mile from any one point, in the thousands of miles of headwater streams. These undoubtedly provide the predominant water source for the majority of birds and mammals in most landscapes. Even migratory birds, presumably unfamiliar with any particular small stream, have an uncanny ability to locate small trickles and pools located on an otherwise dry stream segment under a tall forest canopy.

Streams--Pacific and Cope's giant salamanders, Columbia and southern torrent salamanders, and tailed frogs are restricted to breeding in cool, running water. The most common of these, the Pacific Giant Salamander, contributes significantly to the biomass and predation within small streams. While terrestrial densities of stream-breeding amphibians decrease with distance from streams, stream densities in the area covered by this guide are high enough to obscure dramatic gradients that would be seen over longer distances, and relatively high rainfall and forest floor humidity gives more freedom for terrestrial travel in western Coast Range forests.

Ponds--Western toad, Pacific tree frog, red-legged frog, bull frog, northwestern salamander, long-toed salamander, and rough-skinned newt are restricted to breeding in still or very slow-moving water. Highest terrestrial densities of these species are found in close proximity to breeding sites, and sometimes concentrate on particular hillsides or along particular inflowing or outflowing streams. Some species exhibit substantial dispersal capabilities and may be found in very small numbers several miles from any suitable breeding habitat. While most species typically breed in ponds or lakes, others (e.g. Pacific tree frog) will sometimes breed in very small water, even puddles in abandoned roads, and roadside ditches in open roads. Some require semi-permanent water; for example, northwestern salamanders require more than one season to metamorphose, and may even become neotenic (a

permanent “larval” form that is capable of reproduction), while others (e.g. Pacific tree frog) can breed in water that dries up during summer, because they metamorphose rapidly. Some (e.g. northwestern salamander, red-legged frog) require substrate such as sedges or woody plant stems for egg-laying, while others (e.g. Pacific tree frog, rough-skinned newt) do not require such substrate, though the newt may have requirements for pond-bottom composition.

The marsh shrew and wood duck are common inhabitants of ponds as well as small streamside wetlands. Common garter snakes in particular are attracted to ponds containing frog tadpoles. Marsh shrews also take advantage of this abundant food source. Vaux’s swifts, common nighthawks, and several species of swallows and bats obtain water in flight at ponds and still water pools in streams and rivers. These species also forage on flying insects over these waters.

Spatial and temporal relationships--While we tend to think of landscapes as being within a certain range of land area, and patches as being distinct forest stands of a particular range of sizes, animals living in forest landscapes have differing perspectives on what attributes of their ecosystem serve as landscapes and patches within their home range (e.g. McGarigal and McComb 1995, Wiens et al. 1986). Understanding how an animal views and interacts with its world helps in anticipating how any particular change in its environment might affect it. A black bear may live 20 years, traverse several miles one year and several tens of miles another year, utilizing a wide variety of habitats as they become available in its landscape. In contrast, a vagrant shrew must reproduce several times and complete its life cycle in less than two years, and in usually within a single acre. A rufous hummingbird may breed here in the summer and be in South America during our winter.

Species with much smaller home ranges tend to key in on particular structural attributes within forest stands, while species with larger home ranges additionally look at juxtaposition of

multiple communities or forest types. For a bear, a distinct habitat patch may be a lush meadow, while for an ensatina a distinct habitat patch may be a specific piece of bark with a precise placement on the ground and a particular network of fungal hyphae. These differences contribute to the nature and magnitude of the effects of forest fragmentation on different species and communities of wildlife. Some species flourish, some decline, some are not affected by the fragmentation of forests, but simply respond to the amount of habitat available (Rosenburg and Raphael 1986, McGarigal and McComb 1995, also see Rochelle et al. 1999).

Disturbances that affect wildlife habitat:

All of the previously described ecosystem components are either created by or subsequently affected by various ecosystem processes. Some processes are perpetual and slow, some periodic and catastrophic. Regardless, wildlife habitat is shaped by these and other processes in forest ecosystems. Ecosystem processes should be considered in long-term planning for wildlife habitat in landscapes and watersheds, and consideration of these processes can give insight into the origin of existing wildlife habitat components in forest stands and landscapes. Each of the following paragraphs briefly describe each process and how they influence particular habitat components.

Wildfire--Fire is probably the most widely recognized and influential process operating in forest landscapes in the Coast Range. Intense fires usually kill most or all trees, creating a huge pulse of snags, followed by a huge pulse of down wood (as many of the dead trees fall). Intense fires also usually bring a drastic change in the ground cover for a few to many years (sometimes even changing the composition, for example if ceanothus is germinated), may consume most small logs, slash, and duff accumulated over the mineral soil, and may substantially alter the character of larger logs. Less intense fires kill few or no trees, may remove only a small amount of duff and small-diameter woody debris, and may not kill the roots of any of the major ground cover

species, thus setting it back for only a few years. Fires at different times of year likely have different effects on the ecosystem due to seasonal aspects of plant and animal life histories (e.g. flowering and seeding, nesting and dispersal)(Smith (2000).

Floods, debris-flows, landslides, earth flows--Though the effect of floods are predominantly restricted to the stream or river channel and floodplain, associated events such as debris-flows and landslides typically affect upslope areas. Large floods sometimes remove and restart succession of floodplain vegetation, which often has a significant deciduous component. Debris-flows often start in headwall areas of small streams or mini-headwall tributaries of small streams, and along their path they often take with them huge volumes of wood and soil. Landslides, which may or may not end up in a stream channel, similarly transport large volumes of wood and soil, often creating patches of new soil. Slower events, generally called earth flows, sometimes buckle or slump and form small ponds. Locations that have recently experienced a geomorphic event often support vigorous broadleaf tree and/or shrub communities.

Wind—Wildlife habitat studies on the erratic and unpredictable effects of wind in forest communities are not available for the Pacific Northwest. Nevertheless, field experience suggests an extensive role of wind in forest ecosystems. Most apparent is its role in creating snags or broken-top green trees by breaking a portion of the upper bole from a tall tree. This action is often in concert with previous effects of stem rots, root rots, deformities, or cavities that served to weaken the bole. Some trees are blown over, lifting up wide root shelves, exposing mineral soil and creating a variety of structures used as cover by wildlife. Further, this action produces gaps in the forest canopy, which create more diverse canopy structure, as well as allow more light to the forest floor, which may alter the ground cover (e.g. Spies and Franklin 1989, Spies and Cline 1988). Wind is the primary means of dispersal for pollen and seeds of many species of trees (e.g. western redcedar, black cottonwood), seeds of many forbs (fireweed, thistle), spores for many fungi (primarily stem rots), and thalli for many epiphytic

lichens. Lichens blown to the ground are eaten by deer, elk, rodents, and invertebrates

Ice--Freezing rain may form a crystal-clear glove of ice over all trees, shrubs, and ground cover on a hillside. The sheer weight of this frozen water is enough to break large limbs off of trees, and combined with even moderate winds frequently snaps boles or topples poorly rooted trees. While the ice coating is typically short-term, it has a drastic effect on the accessibility of foods (e.g. seeds, fruits) and foraging substrates (e.g. bark, twigs, and leaves) for numerous species.

Snow--In the Coast Range, the long-term effects of snow are primarily limited to the noble fir/Pacific silver fir associations, where increased snow duration retards growth of most plant species. However, snow causes breakage of limbs and boles in forests at all elevations. Some ground-dwelling species, such as gophers, are able to tunnel through the snow and forage above and below ground even in deep of snow. Even short-duration snowfall can have significant temporary effects on wildlife. Snow cover limits ground foraging opportunities for some birds such as varied thrush, American robin, dark-eyed junco, and winter wren, requiring them to move to lower elevations.

Fungi--The symbiotic role of mycorrhizal fungi and many plant species has become well-known, though many specific relationships remain to be investigated. Other forms of fungi contribute to decomposition of trees and other plant matter. Without the work of fungi, forest landscapes would undoubtedly be more spatially homogenous and would be lacking in decayed substrates necessary for primary cavity excavators (see Van der Kamp 1991). Root rot creates patches of dead and dying trees. Bark beetles are attracted to the stressed trees, and forb-loving rodents to the increase in ground cover. Because of the variable resistance of tree species to root rots, these patches sometimes encourage heterogeneity of tree species in forest stands.

Animal activity--Many animals affect the habitat in which they live. Many small mammals and even some native mollusks disperse fungal spores through their feces. Similarly, some birds and mammals disperse seeds of berry-producing trees and shrubs. Some plant seeds are specifically designed to attach to mammal fur, accomplishing transport to new locations. Some rodents, particularly squirrels and chipmunks, collect and stash conifer seeds and/or cones that, if not eaten, later sprout under proper conditions. Deer, elk, and rodents consume large amounts of vegetation, and if populations are large enough, may actually alter the vegetative species composition of particular sites. While many species of rodents burrow in the soil, no activity is more apparent in forested landscapes than that of the mountain beaver. Aquatic beavers create ponds that are used by fish, amphibians, and predators of several taxa. Beavers can topple numerous trees in nearby forests, and their ponds often create snags by drowning. Mountain beaver and bears can girdle trees, killing them or making them susceptible to stem rots.

Timber harvest--The effect of timber harvest to wildlife is probably one of most well-studied topics in Pacific Northwest forests. While much remains to be learned, certain things are fairly well known. One is that different communities of vertebrates exist (with some overlapping species) in different seral stages (e.g. Meslow and Wight 1975). Another is that canopy cover matters. A range of overstory retention is common in harvest areas today. Depending on the density, such retention may render the habitat unsuitable to some early seral species, encourage use by some species, and be inadequate for species preferring more closed canopy and understory layers (Hansen et al. 1995). Lastly, and perhaps most importantly, recent traditional timber harvest and silvicultural practices (1950s-1980s) typically reduced the number and volume of large snags and logs, the number of tree species, and the diversity of tree sizes compared to unmanaged stands of the same age (Spies and Franklin 1991). While more recent forest practices have lessened some ecological contrasts between managed and unmanaged stands in areas where they are implemented, it must be realized that timber harvest requires a

reduction in volume and/or duration of certain forest components, most notably dead standing and down wood.

Controlled burning--Few studies have been made on the effects of controlled burns on wildlife in western Oregon. Controlled burns can be implemented in a variety of ways to achieve specific objectives, thus are typically mild, consuming small and medium-sized fuels, but may be very hot in places, and may even be used purposely to injure or kill standing live trees to create snags. As with wildfires, the timing and intensity of controlled burns may influence the pioneering plant community. Nevertheless, little study has been accomplished to allow managers to predict such consequences in detail.

Road-building--Almost nothing has been investigated in regard to the effects to wildlife of building, maintaining, and using roads in forest landscapes in the Pacific Northwest, except in regard to the disturbance to elk. Nevertheless, field observations indicate that roads have negative and positive impacts on native plant and animal communities in forested landscapes. The most well known negative effect is the widespread introduction of exotic plants to landscapes.

On the other hand, some sun-loving native plants find suitable habitat on road cut banks. Perhaps surprisingly to some, many species of wildlife respond positively to the habitat created by mountain forest roads; not necessarily the road surfaces themselves, but in particular the associated cut and fill banks. Western fence lizards in particular take advantage of rocky cut banks for foraging and nesting. Alligator lizards and snakes likewise use the habitats at least for foraging. Townsend's solitaires occasionally nest in rocky cut banks, while dark-eyed juncos occasionally nest in grassier slopes. Belted kingfishers and rough-winged swallows excavate nest burrows where a soft layer is present in vertical cut banks. Common nighthawks (widespread) and killdeer (in valleys and near wetlands) occasionally nest on abandoned roads or landings. Closed roads in remote areas are

favorite travelways and loafing sites for many species of medium and large mammals.

In rare instances, high densities of roads may fragment the forest canopy to such a degree that it becomes unsuitable for interior forest species. Roads may also restrict burrowing and dispersal of some low-mobility organisms, but this has not been studied in this ecoregion. Roads certainly reduce the amount of the habitat they replace in the landscape. Reports of road-builders discovering wildlife hiding places, such as bats in crevices of rocks being excavated, are not uncommon. Less studied in the Pacific Northwest is the effect of mortality due to traffic on forest roads. Areas of most concern probably would be the juxtaposition of heavy traffic and relatively rare organisms that may cross roads (e.g. red-legged frogs or western pond turtles). Bridges, depending on construction and context, may provide roosting sites for bats and birds, and nesting sites for the American dipper, swallows, and other species. Lastly, roads can have significant effects on routing of subsurface water, stability of slopes, and paths of debris-flows.

Recreation--Little study has been made of the effect of recreation on wildlife in forest landscapes, except for the direct effects of disturbance and hunting. In general, recreational uses are low-density over most of the forest, and concentrated in a few areas. The effects of human presence in forest landscapes are difficult to determine. In some areas animals become accustomed to regular presence of humans, while in others a rare visit creates great fright in animals. Off-road vehicle may have deleterious effects to sensitive habitats such as wet meadows.

Consideration of specific species and groups:

The following short accounts discuss deer and elk, mountain beaver, fruit-eaters, broad-leaf nesters, cavity nesters and reptiles. These and other species are discussed in more detail in Black (1992).

Deer and elk--Home ranges are usually <1 mile^2 for black-tailed deer, and 1-10 mile^2 for elk. Extent of seasonal movement is generally associated with the magnitude of seasonal change in available habitat, and can vary tremendously among individuals and herds—some being relatively sedentary and others nomadic or migratory. Key components in the home range of deer and elk include forage, cover, and water, and the nearness of each component to the other reduces energy expenditures.

Cover comes in a wide variety of forms, and functions in a variety of ways. For example, shrubs and small trees, and topography, whether in forests or openings, serve as hiding cover. Dense tree canopies may serve as shelter from wind, rain, and snow, and from hot and cold extremes. So-called "optimal" cover serves all these functions, and additionally provides a substantial food source (Witmer et al. 1985).

Topography and location of water influence the use of particular areas. Moderate slopes (15-30%) typically receive greatest use, while slopes >90% receive little use; nevertheless, juxtaposition of food, cover, water, and predators (including humans) during different seasons strongly dictate patterns of use. South aspects (especially early seral stages) are often used for sunning in cool seasons, and north aspects for refuge from heat (primarily Cascades). Calving areas for elk are typically on gentle slopes, or level pockets surrounded by steep ground, and often near water (Witmer and deCalesta 1983).

Diets of deer and elk overlap to a large degree, with deer generally being more selective for digestible forage. Availability in large part determines what deer and elk eat. General trends in foraging habits are listed below (primarily from Rochelle 1992, but also Friesen 1991, Stussy 1994):

Spring Forbs, grasses, and new growth on shrubs and trees. Examples are velvet grass, false dandelion, sedges, trailing blackberry, salal, huckleberries, Douglas-fir. Diet reflects a transition from winter to summer foods.

Summer Forbs, grasses, ferns and shrubs (leaves, twigs and fruit). Examples are fireweed, false dandelion, trailing blackberry, vine maple, thimbleberry, red huckleberry, sedges, and legumes.

Fall Shrubs, forbs and grasses. Examples are trailing blackberry, red huckleberry, salal, thimbleberry, red alder, fireweed, dandelion, sedges and legumes. Shrubs increase in importance, and fruits commonly are utilized at this time.

Winter Winter-active grasses and forbs, shrubs, and conifers. Examples are trailing blackberry, elderberries, sedges, false dandelion, salal, red huckleberry, ceanothus species, Oregon grape, Douglas-fir, western redcedar and western hemlock.

Managers have sometimes focused on either summer or winter range forage with regard to concerns over elk survival and reproduction. Stussy (1994) conducted studies during a time when winter range cover and forage was thought to be the most important factor in elk survival and reproduction, and that burning of harvest units improved forage quality. However, Stussy (1994) found that winter forage enhancement efforts did not increase elk survival or reproduction as was thought, and suggested that summer forage (for building fat reserves) was likely more important. Friesen (1991) suggested, "elk forage enhancement in winter range should be evaluated on a site-specific basis." Given the variation in herds, populations, and environments occupied, this attitude is suited for all aspects of big game management.

Observations in the Coast Range suggest that vehicle access can influence movements and survival rate of elk (Cole et al. 1997), and use of cover by elk cows increased during the hunting season (Witmer and deCalesta 1983).

Mountain beaver--This interesting animal is very sensitive to temperature extremes, and its inefficient kidneys require that individuals obtain approximately one-third of its body weight in

water each day (Johnson 1971). The species occurs predominantly in areas with relatively high rainfall and soil conditions providing succulent vegetation and high burrow humidity (Voth 1968). Soils need to be soft for burrowing and porous to reduce likelihood of flooding tunnels (Hacker and Coblentz 1993). They generally are found more on north (Hacker and Coblentz 1993) slopes and wet draws, but can be found in most any area where water or abundant herbaceous growth are present (Cafferata 1992). They consume a wide variety of plants but primarily ferns; lactating females consume significant amounts of conifer and grasses for the additional protein (Voth 1968). Conifers are not a preferred food source, but are consumed when availability of alternate foods is limited, such as during the winter (Voth 1968) or during canopy closure (Neal and Borrecco 1981). Nests and feeding chambers are often under woody debris, or even thick shrub patches, perhaps for protection from predators such as coyote and bobcats (Maser et al. 1981). Dispersing juveniles have been tracked one-third of a mile (Martin 1971).

Fruit-eaters--While berries on forest understory shrubs are consumed by several species of birds and mammals, the number and diversity of bird species that forage on berries in relatively open-canopied areas is much greater. Further, most favorite berry-producing plants (e.g. elderberries and cherries) are typically more abundant and productive in open-canopy environments. Therefore, managers interested in providing for berry-loving birds in forested landscapes should consider management of these species in early seral stages.

Broadleaf nesters--Broadleaf nesters such as the warbling vireo typically breed in relatively young forests and riparian areas, where deciduous trees are more abundant, and less so in mature and old forests where deciduous trees are often shaded out or widely spaced. Managers interested in increasing broadleaf nesters in forest stands should concentrate on retaining hardwoods during harvest operations and early seral stages.

Cavity-nesters--Fairly standard management practices exist for cavity-nesters, derived mostly from Neitro et al. (1985). However, the preference of some species for different seral stages and/or canopy closure is not often acknowledged in management guidelines or analyses for cavity-nesters. For example, while red-breasted sapsuckers and chestnut-backed chickadees prefer moderate to closed-canopy forests, northern flickers and western bluebirds prefer stands that are relatively open, the latter even requiring some open ground for foraging. Similarly, distributions of associated tree species are rarely considered. For example, downy woodpeckers are largely restricted to broadleaf habitats in riparian areas and occasional hillside patches. Lastly, the longevity of large Douglas-fir and western redcedar snags compared to that of softer wood has been rightly acknowledged and utilized in long-term snag management. However, harvest units with only large, freshly created snags of these species will lack substantial substrate for excavation during the earliest seral stages that are preferred by species such as the western bluebird. While small Douglas-fir and western redcedar snags, and any size broadleaf, hemlock, and true fir snags, fall relatively quickly, these provide relatively immediate substrate for woodpeckers and secondary cavity-nesters in early seral stages, as do remnant snags from former stands.

Reptiles--While frequently evaluated as a group, reptiles are tremendously diverse in their habitat use. They range from the seasonally aquatic western pond turtle to the hot- and dry-loving western fence lizard. In the northern Coast Range, the ranges of the racer, gopher snake, ringneck snake, southern alligator lizard, western skink, and western fence lizard are primarily limited to drier habitats on the east slope. Other species, such as the rubber boa, occur spottily throughout most of the northern Coast Range but are generally absent from the fog drip zone closest to the coast. In contrast, northern alligator lizards and northwestern and common garter snakes occur throughout the area, the latter commonly searching for amphibian prey in moist riparian and pond habitats. Very little study has been made of reptiles, and new discoveries of the distribution of these species are still being made. Management of reptiles requires a species-specific approach.

SERIES DISCUSSIONS

Pacific silver fir/Noble fir

Go to Pacific silver fir chapter

The occurrence of this series is extremely limited in the Coast Range and no specific wildlife associations are known with it. Several birds and mammals associated with this series in the Cascades do not occur during the breeding season in the Coast Range. The common species in this series are expected to be similar to those in the western hemlock series (see that series). The shrub layer under forest canopies in this series is much reduced compared to other series in the Coast Range, thus species such as the Swainson's thrush and Wilson's warbler that prefer thicker shrubs are rare under forest canopies in this series, but may be abundant in nearby abundant shrub habitats. Similarly, while the understory of these forests provides little food for the mountain beaver, early seral habitats in this zone may have abundant food and moist soils suitable for this species. Due to the cool, wet condition, lizards are generally rare here. During late fall and winter, rare northern migrants such as gray-crowned rosy-finches and Clark's nutcrackers are sometimes found in open areas in this zone (e.g. Mary's Peak).

Grand fir

Go to grand fir chapter

This series has not been extensively studied and no specific wildlife associations are known with it. The canopy and understory are often quite diverse, so it is likely that a wide variety of species occurs in this series. The common species are expected to be similar to those in the western hemlock series (see that series), but terrestrial amphibian density and diversity may be reduced because of the drier forest floor conditions. Due to its predominantly eastern distribution in the Coast Range, tailed frogs probably are rare or absent in this series, In contrast, the ringneck snake, southern alligator lizard, and western skink, may be more frequent in forests in this series than others (except PSME series), while western fence lizards are probably frequent in early seral stages and roadsides.

Sitka spruce

Go to Sitka spruce chapter

Few studies have been conducted in this series, and little is known regarding wildlife associations here. The common species in this series are expected to be similar to those in the western hemlock series (see that series). Several species of reptiles are generally absent in this very coastal series (see section on reptiles). Marbled murrelets nest in large-limbed trees, usually Douglas-fir or Sitka spruce, but also have been found nesting on dwarf mistletoe platforms in relatively small western hemlock, particularly in this zone (Nelson and Wilson 2000).

Douglas-fir

Go to Douglas-fir chapter

Both the canopy and understory are often quite diverse, so it is likely that a wide variety of species occurs in this series. Common forest birds, and mammals are similar to those listed for the western hemlock zone (see that series, Anderson 1972, Chambers et al. 1999), but terrestrial amphibian density and diversity may be comparatively low because of the drier forest floor conditions. This series is predominantly in the eastern Coast Range, and southern Willamette Valley hills, and probably contains the upper limit of reproducing western gray squirrels (where a mix of conifers and hardwoods are present, especially oak), southern alligator lizards, and gopher snakes, although these species may occasionally occur in lower elevations of the grand fir or western hemlock series. Western fence lizards, alligator lizards, racers, and ring-necked snakes are probably more regular in this series than in more mesic series. In the area covered by this guide, tailed frogs probably do not occur in this series.

Western hemlock

Go to western hemlock chapter

Nearly all studies of vertebrates in western Oregon forests have been conducted in this zone. More is known about vertebrates in this series than in any other series in the area covered by this guide. Most of the information in “Wildlife and vegetation of unmanaged

Douglas-fir forests" (Ruggiero et al. 1991) refers to forests in this series.

Common forest birds breeding in this zone include: winter wren, chestnut-backed chickadee, golden-crowned kinglet, hermit warbler, Wilson's warbler, western flycatcher, brown creeper, Hammond's flycatcher, Swainson's thrush, varied thrush, red-breasted nuthatch, Steller's jay, dark-eyed junco, western tanager, Hutton's vireo, and hairy woodpecker (Carey et al. 1991, Hagar 1992, McGarigal and McComb 1995). In early seral growth dominated by shrubs, grasses, and forbs, the following birds are typically most abundant: rufous hummingbird, white-crowned sparrow, Swainson's thrush, song sparrow, spotted towhee, American goldfinch, willow flycatcher, orange-crowned warbler, MacGillivray's warbler, Wilson's warbler, dark-eyed junco, Bewick's wren, American robin, black-headed grosbeak, and wrentit (Morrison and Meslow 1983, McGarigal and McComb 1995) Addition of suitable snags brings house wren into the list (Schreiber and deCalesta 1992). Species more abundant in older forests include Vaux's swift, pileated woodpecker, red crossbill, hairy woodpecker, and red-breasted nuthatch.

Common ground-dwelling mammals in mature and old forests include Trowbridge's shrew, western redbacked vole, Townsend's chipmunk, shrew-mole, deer mouse, and several other shrew species (Corn and Bury 1991a, Maser et al. 1981). Common canopy-dwelling mammals, which also visit the forest floor, include northern flying squirrel, Douglas squirrel, and red tree vole (Maser et al. 1981, Corn and Bury 1991). The most abundant and ubiquitous amphibians in forests include western redback salamander, ensatina, and rough-skinned newt (Corn and Bury 1991b).

LITERATURE CITED

Anderson, S. H. 1972. Seasonal variations in forest birds of western Oregon. Northwest Sci. 46(3):194-206.

Black, H. C., tech. ed. 1992. Silvicultural approaches to animal damage management in Pacific Northwest forests. Gen. Tech. Rep. PNW-GTR-287. USDA Forest Service, PNW Res. Sta. Portland, OR.

Brown, E. R., tech. ed. 1985. Management of wildlife and fish habitats in forests of western Oregon and Washington. Publication No. R6-F&WL-192-1985. USDA Forest Service and USDI Bureau of Land Manage. Portland, OR.

Bunnell, F. L., and L. L. Kremsater. 1990. Sustaining wildlife in managed forests. Northwest Environmental Journal 6(2):243-269.

Cafferata, S. L. 1992. Mountain beaver. Pp 231-251 in Black, H. C., tech. ed. Silvicultural approaches to animal damage management in Pacific Northwest forests. Gen. Tech. Rep. PNW-GTR-287. USDA Forest Service, PNW Res. Sta. Portland, OR.

Carey, A. B., M. M. Hardt, S. P. Horton, and B. L. Biswell. 1991. Spring bird communities in the Oregon Coast Range. Pp. 123-142 in Ruggiero, L. F., K. B. Aubry, A. B. Carey, M. H. Huff, tech. eds. Wildlife and vegetation of unmanaged Douglas-fir forests. Gen. Tech. Rep. PNW-GTR-285. Portland, OR:USDA Forest Service, Pa

Chambers, C. L., W. C. McComb, and J. C. Tappeiner II. 1999. Breeding bird responses to three silvicultural treatments in the Oregon Coast Range. Ecol. Appl. 9(1):171-185.

Cole, E. K., M. D. Pope, and R. G. Anthony. 1997. Effects of road management on movement and survival of Roosevelt elk. J. Wildl. Manage. 61(4):1115-1126.

Corn, P. S., and R. B. Bury. 1991a. Small mammal communities in the Oregon Coast Range. Pp. 241-254 in Ruggiero, L. F., K. B. Aubry, A. B. Carey, M. H. Huff, tech. eds. Wildlife and vegetation of unmanaged Douglas-fir forests. Gen. Tech. Rep. PNW-GTR-285. Portland, OR:USDA Forest Service.

Corn, P. S., and R. B. Bury. 1991b. Terrestrial amphibian communities in the Oregon Coast Range. Pp. 305-317 in Ruggiero, L. F., K. B. Aubry, A. B. Carey, M. H. Huff, tech. eds. Wildlife and vegetation of unmanaged Douglas-fir forests. Gen. Tech. Rep. PNW-GTR-285. Portland, OR:USDA Forest S

Friesen, C. A. 1991. The effect of broadcast burning on the quality of winter forage for elk, western Oregon. MS Thesis, Oreg. State Univ., Corvallis.

Hacker, A. L., and B. E. Coblentz. 1993. Habitat selection by mountain beavers recolonizing Oregon Coast Range clearcuts. J. Wildl. Manage. 57(4):847-853.

Hagar, J. C. 1992. Bird communities in commercially thinned and unthinned Douglas-fir stands of western Oregon. MS Thesis, Oreg. State Univ., Corvallis.

Hagar, J. C., and M. A. Stern. 2001. Avifauna in oak woodlands of the Willamette Valley, Oregon. Northwest Sci. XX:XXX-XXX.

Hansen, A. J., T. A. Spies, F. J. Swanson, and J. L. Ohmann. 1991. Conserving biodiversity in managed forests, lessons from natural forests. BioScience 41:382-392.

Hansen, A., W. McComb, R. Vega, M. Raphael, and M. Hunter. 1995. Bird habitat relationships in natural and managed forests in the west Cascades of Oregon. Ecological Applications 5(3):555-569.

Hunter, M. L., Jr. 1997. The biological landscape. Pp. 57-67 in K. A. Kohm and J. F. Franklin, eds., Creating a forestry for the 21st century. Island Press, Washington, D.C.

Johnson, D. H., and T. A. O'Neil (Managing Directors). 2001. Wildlife-Habitat Relationships in Oregon and Washington. Oregon State University Press, Corvallis, OR.

Johnson, S. R. 1971. The thermal regulation, microclimate and distribution of the mountain beaver Aplodontia rufa pacifica Merriam. PhD dissertation, Oreg. State Univ., Corvallis.

Marcot, B. G. 1997. Biodiversity of old forests of the west: a lesson from our elders. Pp. 87-105 in K. A. Kohm and J. F. Franklin, eds., Creating a forestry for the 21st century. Island Press, Washington, D.C.

Martin, P. 1971. Movements and activities of the mountain beaver (Aplodontia rufa). J. Mamm. 52(4):717-723.

Maser, C., B. R. Mate, J. F. Franklin, and C. T. Dyrness. 1981. Natural history of Oregon Coast mammals. USDA Forest Service, Gen. Tech. Rep. PNW-133.

McGarigal, K., and W. C. McComb. 1995. Relationships between landscape structure and breeding birds in the Oregon Coast Range. Ecol. Monog. 65:235-260.

Meslow, E. C., and H. M. Wight. 1975. Avifauna and succession in Douglas-fir forests of the Pacific Northwest. In, Smith, Dixie R., tech. coord. Proceedings of the symposium on management of forest and range habitats for non-game birds: May 6-9, 1975, Tucson, Arizona. USDA Forest Service, Was

Neal, F. D., and J. E. Borrecco. 1981. Distribution and relationship of mountain beaver to openings in sapling stands. Northwest Sci. 55:79-86.

Neitro, W. A., R. W. Mannan, D. Taylor, V. W. Binkley, B. G. Marcot, F. F. Wagner, and S. P. Cline. 1985. Snags (wildlife trees). Pp 129-169 in Brown, E. R., tech. ed., Management of wildlife and fish habitats in forests of western Oregon and Washington. Part 1-Chapter narratives. Publication No. R6-F&WL-192-1985. USDA Forest Service and USDI Bureau of Land Management

Nelson, S.K., and A.K. Wilson. 2000. Marbled Murrelet habitat characteristics on state lands in western Oregon. Final Rep., Oreg. Coop. Fish and Wildlife Research Unit, Oregon State Univ., Dept. Fisheries and Wildlife, Corvallis.

O'Neil, T.A., D.H. Johnson, C. Barrett, M. Trevithick, K.A. Bettinger, C. Kiilsgaard, M. Vander Heyden, E.L. Greda, B.G. Marcot, P.J. Doran, L. Wunder, and S. Tank. 2000. CD-ROM: Matrixes for Wildlife-Habitat Relationships in Oregon and Washington. Northwest Habitat Institute, Corvallis, OR.

Rochelle, J. 1992. Deer and elk. Pp. 333-349 in Black, H. C., tech. ed. Silvicultural approaches to animal damage management in Pacific Northwest forests. Gen. Tech. Rep. PNW-GTR-287. USDA Forest Service, PNW Res. Sta. Portland, OR

Rosenburg, K. V., and M. G. Raphael. 1986. Effects of forest fragmentation on vertebrates in Douglas-fir forests. Pp. 263-272 in Verner, J., M. L. Morrison, and C. J. Ralph. Wildlife 2000: modeling habitat relationships of terrestrial vertebrates. Based on an international symposium held at Stanfo

Ruggiero, L. F., K. B. Aubry, A. B. Carey, M. H. Huff, tech. eds. 1991. Wildlife and vegetation of unmanaged Douglas-fir forests.

Gen. Tech. Rep. PNW-GTR-285. Portland, OR: USDA Forest Service, Pacific Northwest Research Station.

Schreiber, B., and D. S. deCalesta. 1992. The relationship between cavity-nesting birds and snags on clearcuts in western Oregon. For. Ecol. and Manage. 50:299-316.

Spies T. A., and J. F. Franklin. 1989. Gap characteristics and vegetation response in coniferous forests of the Pacific Northwest. Ecology 70:543-545

Spies, T. A., and J. F. Franklin. 1991. The structure of natural young, mature, and old-growth Douglas-fir forests in Oregon and Washington. Pp. 111-121 in Ruggiero, L. F., K. B. Aubry, A. B. Carey, M. H. Huff, tech. eds. Wildlife and vegetation of unmanaged Douglas-fir forests. Gen. Tech. Rep.

Spies, T. A., and S. P. Cline. 1988. Coarse woody debris in forests and plantations of coastal Oregon. In From the forest to the sea: a story of fallen trees. Tech. eds. C. Maser, R. F. Tarrant, J. M. Trappe, and J. F. Franklin. USDA For. Serv. Gen. Tech. Rep. PNW-GTR-229. pp. 5-23

Stussy, R. J. 1994. The effects of forage improvement practices on Roosevelt elk in the Oregon Coast Range. MS Thesis, Oreg. State Univ., Corvallis.

Van der Kamp, B. J. 1991. Pathogens as agents of diversity in forested landscapes. The Forestry Chronicle 67(4):353-354.

Voth, E. H. 1968. Food habits of the Pacific mountain beaver, Aplodontia rufa pacifica Merriam. Ph.D. Thesis, Oreg. State. Univ., Corvallis.

Wiens, John A., John F. Addicott, Ted J. Case, and Jared Diamond. 1986. Overview: the importance of spatial and temporal scale in ecological investigations. In Diamond, Jared,

and Ted J. Case, eds., Community Ecology. Harper and Row, New York.

Witmer, G. W., M. Wisdom, E. P. Harshman, R. J. Anderson, C. Carey, M. P. Kuttel, I. D. Luman, J. A. Rochelle, R. W. Scharpf, and D. Smithey. 1985. Deer and elk. Pp. 231-258 in Brown, E. R., tech. ed., Management of wildlife and fish habitats in forests of western Oregon and Washington. Part 1-Chapter narratives. Publication No. R6-F&WL-192-1985. USDA Forest Service and USDI Bureau of Land Manage. Po

Witmer, G. W., and D. S. deCalesta. 1983. Habitat use by female Roosevelt elk in the Oregon Coast Range. J. Wildl. Manage. 47(4):933-939.

COMMON AND SCIENTIFIC NAMES OF VERTEBRATES THAT REGULARLY UTILIZE TERRESTRIAL HABITATS OF THE NORTHERN COAST RANGE

Mammals (common name)	**Mammals (latin)**
Virginia Opossum	Didelphis virginiana
Baird's Shrew	Sorex bairdi
Pacific Water or Marsh Shrew	Sorex bendirii
Montane or Dusky Shrew	Sorex monticolus
Pacific Shrew	Sorex pacificus
Fog Shrew	Sorex sonomae
Trowbridge's Shrew	Sorex trowbridgii
Vagrant Shrew	Sorex vagrans
Shrew-mole	Neurotrichus gibbsii
Coast Mole	Scapanus orarius
Townsend's Mole	Scapanus townsendii
California Myotis	Myotis californicus
Long-eared Myotis	Myotis evotis
Little Brown Myotis	Myotis lucifugus
Fringed Myotis	Myotis thysanodes
Long-legged Myotis	Myotis volans
Yuma Myotis	Myotis yumanensis
Hoary Bat	Lasiurus cinereus
Silver-haired Bat	Lasionycteris noctivagans
Big Brown Bat	Eptesicus fuscus
Townsend's Big-eared Bat	Corynorhinus townsendii
Brush Rabbit	Sylvilagus bachmani
Snowshoe Hare	Lepus americanus
Mountain Beaver	Aplodontia rufa
Townsend's Chipmunk	Tamias townsendii
California Ground Squirrel	Spermophilus beecheyi
Western Gray Squirrel	Sciurus griseus
Douglas' Squirrel	Tamiasciurus douglasii
Northern Flying Squirrel	Northern flying squirrel
Western Pocket Gopher	Thomomys mazama
American Beaver	Castor canadensis
Deer Mouse	Peromyscus maniculatus
Bushy-tailed Woodrat	Neotoma cinerea

Mammals (common name)	Mammals (latin)
Dusky-footed Woodrat	Neotoma fuscipes
House Mouse	Mus musculus
Western Red-backed Vole	Clethrionomys californicus
White-footed Vole	Phenacomys albipes
Red Tree Vole	Phenacomys longicaudus
Long-tailed Vole	Microtus longicaudus
Creeping Vole	Microtus oregoni
Townsend's Vole	Microtus townsendii
Pacific Jumping Mouse	Zapus trinotatus
Common Porcupine	Erethizon dorsatum
Coyote	Canis latrans
Black Bear	Ursus americanus
Common Raccoon	Procyon lotor
American Marten	Martes americana
Ermine	Mustela erminea
Long-tailed Weasel	Mustela frenata
Mink	Mustela vison
River Otter	Lutra canadensis
Western Spotted Skunk	Spilogale gracilis
Striped Skunk	Mephitis mephitis
Mountain Lion	Puma concolor
Bobcat	Lynx rufus
Elk or Wapiti	Cervus elaphus
Black-tailed and Mule Deer	Odocoileus hemionus

Birds (common name)	Birds (latin)
Double-crested Cormorant	Phalocrocorax auritus
Great Blue Heron	Ardea herodias
Green Heron	Butorides virescens
Turkey Vulture	Cathartes aura
Wood Duck	Aix sponsa
Hooded Merganser	Lophodytes cucullatus
Common Merganser	Mergus merganser
Osprey	Pandion haliaetus
Bald Eagle	Haliaeetus leucocephalus
Sharp-shinned Hawk	Accipiter striatus

Birds (common name)	Birds (latin)
Cooper's Hawk	Accipiter cooperii
Red-tailed Hawk	Buteo jamaicensis
American Kestrel	Falco sparverius
Merlin	Falco columbarius
Peregrine Falcon	Falco peregrinus
Blue Grouse	Dendragapus obscurus
Ruffed Grouse	Bonasa umbellus
Wild Turkey	Meleagris gallopavo
Mountain Quail	Oreortyx pictus
Marbled Murrelet	Brachyramphus marmoratus
Band-tailed Pigeon	Columba fasciata
Mourning Dove	Zanaida macroura
Barn Owl	Tyto alba
Western Screech-Owl	Otus kennicottii
Great Horned Owl	Bubo virginianus
Northern Pygmy-Owl	Glaucidium gnoma
Spotted Owl	Strix occidentalis
Barred Owl	Strix varia
Long-eared Owl	Asio otus
Northern Saw-whet Owl	Aegolius acadicus
Common Nighthawk	Chordeiles minor
Black Swift	Cypseloides niger
Vaux's Swift	Chaetura vauxi
Rufous Hummingbird	Selasphorus rufus
Belted Kingfisher	Ceryle alcyon
Red-breasted Sapsucker	Sphyrapicus ruber
Downy Woodpecker	Picoides pubescens
Hairy Woodpecker	Picoides villosus
Northern Flicker	Colaptes auratus
Pileated Woodpecker	Dryocopus pileatus
Northern Shrike	Lanius excubitor
Cassin's Vireo	Vireo cassinii
Hutton's Vireo	Vireo huttoni
Warbling Vireo	Vireo gilvus
Gray Jay	Perisoreus canadensis
Steller's Jay	Cyanocitta stelleri
American Crow	Corvus brachyrhynchos

Birds (common name)	Birds (latin)
Common Raven	Corvus corax
Olive-sided Flycatcher	Contopus cooperi
Western Wood-Pewee	Contopus sordidulus
Willow Flycatcher	Empidonax traillii
Hammond's Flycatcher	Empidonax hammondii
Pacific-slope Flycatcher	Empidonax difficilis
Purple Martin	Progne subis
Tree Swallow	Tachycineta bicolor
Violet-green Swallow	Tachycineta thalassina
Northern Rough-winged Swallow	Stelgidopteryx serripenis
Barn Swallow	Hirundo restica
Cliff Swallow	Petrochelidon pyrrhonota
Black-capped Chickadee	Poecile atricapillus
Chestnut-backed Chickadee	Poecile rufescens
Bushtit	Psaltriparus minimus
Red-breasted Nuthatch	Sitta canadensis
White-breasted Nuthatch	Sitta carolinensis
Brown Creeper	Certhia americana
Bewick's Wren	Thryomanes bewickii
House Wren	Troglodytes aedon
Winter Wren	Troglodytes troglodytes
Golden-crowned Kinglet	Regulus satrapa
Ruby-crowned Kinglet	Regulus calendula
Western Bluebird	Sialia mexicana
Townsend's Solitaire	Myadestes townsendi
Swainson's Thrush	Catharus ustulatus
Hermit Thrush	Catharus guttatus
American Robin	Turdus migratorius
Varied Thrush	Ixoreus maevius
Wrentit	Chamaea fasciata
European Starling	Sturnus vulgaris
Cedar Waxwing	Bombycilla cedrorum
Orange-crowned Warbler	Vermivora celata
Yellow Warbler	Dendroica petechia
Yellow-rumped Warbler	Dendroica coronata
Black-throated Gray Warbler	Dendroica nigrescens
Townsend's Warbler	Dendroica townsendi

Birds (common name)	Birds (latin)
Hermit Warbler	Dendroica occidentalis
MacGillivray's Warbler	Oporornis tolmiei
Common Yellowthroat	Geothlypis trichas
Wilson's Warbler	Wilsonia pusilla
Western Tanager	Piranga ludoviciana
Spotted Towhee	Pipilo maculatus
Chipping Sparrow	Spizella passerina
Savannah Sparrow	Passerculus sandwichensis
Fox Sparrow	Passerella iliaca
Song Sparrow	Melospiza melodia
Lincoln's Sparrow	Melospiza lincolnii
White-crowned Sparrow	Zonotrichia leucophrys
Golden-crowned Sparrow	Zonotrichia atricapilla
Dark-eyed Junco	Junco hyemalis
Black-headed Grosbeak	Pheucticus melanocephalus
Lazuli Bunting	Passerina amoena
Red-winged Blackbird	Agelaius phoeniceus
Brewer's Blackbird	Euphagus cyanocephalus
Brown-headed Cowbird	Molothrus ater
Bullock's Oriole	Icterus bullockii
Gray-crowned Rosy Finch	Leucosticte tephrocotis
Purple Finch	Carpodacus purpureus
House Finch	Carpodacus mexicanus
Red Crossbill	Loxia curvirostra
Pine Siskin	Carduelis pinus
American Goldfinch	Carduelis tristis
Evening Grosbeak	Coccothraustes vespertinus
House Sparrow	Passer domesticus

Reptiles (common name)	Reptiles (latin)
Western Pond Turtle	Clemmys marmorata
Northern Alligator Lizard	Elgaria coerulea
Southern Alligator Lizard	Elgaria multicarinata
Western Fence Lizard	Sceloporus occidentalis
Western Skink	Eumeces skiltonianus
Rubber Boa	Charina bottae

Reptiles (common name)	Reptiles (latin)
Racer	Coluber constrictor
Sharptail Snake	Contia tenuis
Ringneck Snake	Diadophis punctatus
Gopher Snake	Pituophis catenifer
Northwestern Garter Snake	Thamnophis ordinoides
Common Garter Snake	Thamnophis sirtalis

Amphibians (common name)	Amphibians (latin)
Northwestern Salamander	Ambystoma gracile
Long-toed Salamander	Ambystoma macrodactylum
Cope's Salamander	Dicamptodon copei
Pacific Giant Salamander	Dicamptodon tenebrosus
Columbia Torrent Salamander	Rhyacotriton kezeri
Southern Torrent Salamander	Rhyacotriton variegatus
Rough-skinned Newt	Taricha granulosa
Dunn's Salamander	Plethodon dunni
Western Red-backed Salamander	Plethodon vehiculum
Ensatina	Ensatina eschscholtzii
Clouded Salamander	Aneides ferreus
Tailed Frog	Ascaphus truei
Western toad	Bufo boreas
Pacific Treefrog	Pseudacris regilla
Red-legged Frog	Rana aurora
Bullfrog	Rana catesbeiana